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- 22 October 2002 (22.10.2002) US
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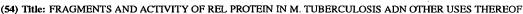
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.





(57) <u>Abstract:</u> The present invention relates to mycobacteria. The present invention further relates to *M. tuberculosis*. The present invention further relates to the Rel<sub>Mtb</sub>. The present invention also relates to identifying new antibacterial targets and agents to inhibit mycobacterial growth. The present invention also relates to polynucleotides of Rel<sub>Mtb</sub>, Polypeptides of Rel<sub>Mtb</sub>, and antibodies that bind Rel<sub>Mtb</sub> and methods of using the same.

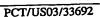
# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/33692

A. CLASSIFICATION OF SUBJECT MATTER  IPC(7) : A61K 49/00, 39/395, 39/40, 39/02, 39/04; C12Q 1/00; C07H 21/02				
US CL : 424;9.1,9.2,130.1,139.1,168.1,234.1,248.1; 435/4, 7.1, 26; 530/300, 350; 536/23.1, 23.7				
	o International Patent Classification (IPC) or to both r LDS SEARCHED	national classification and IPC		
Minimum documentation searched (classification system followed by classification symbols) U.S.: 424;9.1,9.2,130.1,139.1,168.1,234.1,248.1; 435/4, 7.1, 26; 530/300, 350; 536/23.1, 23.7				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic da BIOSIS CAB	ata base consulted during the international search (nan BA, CAPLUS, EMPASE, JAPIO, LIFESCI, MEDLI	ne of data base and, where practicable, sea NE, SCISEARCH, USPATFULL	rch terms used)	
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where a	appropriate, of the relevant passages	Relevant to claim No.	
Y	AVARBOCK, D0. et al. Differential regulation of aminoacylation state of a tRNA-ribosome-mRNA-R September 2000, Vol. 39, No. 38, pages 11640-116	opposing RELmtb activities by the elmtb complex. Biochemistry.	1-8,33-38, 85-101	
Y	PRIMM, T.P. et al. The stringent response of Myolong-term survival. Journal of Bacteriology. Septe 4889-4898, entire reference.	cobacterium tuberculosis is required for mber 2000, Vol. 182, No. 17, pages	1-8,33-38, 85-101	
Y	US 5,834,279 A (RUBIN et al.) 10 November 1998, entire reference. 1-8, 33-38, 85-101		1-8, 33-38, 85-101	
Further documents are listed in the continuation of Box C. See patent family annex.				
* Special categories of cited documents:  "T" later document published after the international filing date o date and not in conflict with the application but cited to under the document defining the general state of the art which is not considered to be  "A" document defining the general state of the art which is not considered to be		ation but cited to understand the		
of particular relevance  "X"  document of particular relevance; the claimed invention of considered novel or cannot be considered to involve an invente document is taken alone		claimed invention cannot be red to involve an inventive step		
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		"Y" document of particular relevance; the considered to involve an inventive step	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination	
"O" document	referring to an oral disclosure, use, exhibition or other means	being obvious to a person skilled in the		
"P" document published prior to the international filing date but later than the "&" document member of the same patent family priority date claimed			family	
Date of the actual completion of the international search  Date of mailing of the international search report				
29 September 2004 (29.09.2004)				
Name and mailing address of the ISA/US  Mail Stop PCT, Atm: ISA/US  Commissioner for Patents  P.O. Box 1450  Alexandria, Virginia 22313-1450  Foscimile No. (703)205, 2320				
Facsimile No. (703)305-3230 orm PCT/ISA/210 (second sheet) (July 1998)				





# INTERNATIONAL SEARCH REPORT

## BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-8, 33-38, and 85-101, drawn to method of altering Relmb activity and identifying compounds which alter.

Group II, claims 9-24, 39-74, and 102-104, drawn to DNA, transformed hosts and methods of use.

Group III, claims 25-33 and 75-76, 79-81, drawn to polypeptides and methods of use.

Group IV, claims 82-84, drawn to antibodies.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: each group is drawn to a functionally and structurally special technical feature. The special technical feature of Group I is a compound which alters Rel<sub>mtb</sub> activity, the special technical feature of Group II is nucleic acids, the special technical feature of Group IV is antibodies.



International application No.

PCT/US03/33692

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)			
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:			
1. Claim No because the	s.: ney relate to subject matter not required to be searched by this Authority, namely:		
	s.: ney relate to parts of the international application that do not comply with the prescribed requirements to such that no meaningful international search can be carried out, specifically:		
	s.: 77-78  ley are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).		
Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)			
This International Searching Authority found multiple inventions in this international application, as follows:  Please See Continuation Sheet			
1. As all req	uired additional search fees were timely paid by the applicant, this international search report covers all		
searchable	searchable claims.		
	rchable claims could be searched without effort justifying an additional fee, this Authority did not invite f any additional fee.		
	ome of the required additional search fees were timely paid by the applicant, this international search report by those claims for which fees were paid, specifically claims Nos.:		
	ed additional search fees were timely paid by the applicant. Consequently, this international search report is to the invention first mentioned in the claims; it is covered by claims Nos.: 1-8,33-38 and 85-101		
Remark on Protest			
	No protest accompanied the payment of additional search fees.		